

## THE STUDY OF MITOTIC CHROMOSOMES AT *PAPAVER RHOEAS L. (2n=14) SPECIES.*

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**Key words** - *Papaver rhoeas L.*, chromosomes, mitosis

**Abstract**- The chromosomes number is 14 ( $2n=14$ ). The karyotype is symmetric, less evolved.

### INTRODUCTION

These new studies are a continuation of some series of researches which intend to see the possible overlaps between the karyotype's features of some definite species and the link inside *Papaveraceae family*, as a basis for one hypothesis or another.

### MATERIALS AND METODS

The seeds material was taken from the individuals of *Papaver rhoeas*' population, located in the area of the Botanical Garden, in Iassy.

The seeds collected in 2002 were soaked for germination in Petri plates, on filtered paper, moistured in distilled water, in darkness, at room's temperature (22-24°C).

When the little roots had been of 0,5-1 cm length, the germinated seeds were soaked in a colchicine solution of 0,2 % for 2 hours, afterwards they were soaked again on filtered paper moistened in distilled water for another 2 hours.

The material thus treated was fixed for almost 24 hours in a mixture of absolute ethylic alcohol: glacial acetic acid in a 3:1 concentration. After it was fixed there was done the hydrolysis of vegetal material in HCl 50%, for almost 10 minutes.

Afterwards there was realized the stain with Carr solution (a modified Schiff stain) for at least 2 hours time (the material could be kept in stain for 2 weeks).

The microscopes slides were realized with the squash method, being examined at Nikon Eclipse 600 microscope and photographed using the objective lens with immersion 100x.

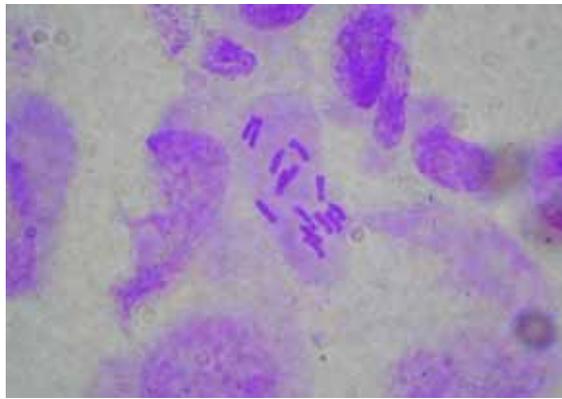
### REZULT AND DEBATES

All our metaphses emphasized the presence of 14 chromosomes, data corresponding with those of the theoretical studies. One determined some difference about the types of chromosomes, 6 pairs presenting under median (sm) ones, only the third pair presents metacentric chromosomes (M). There fore, we have symmetrical, less evolved karyotype. One also noticed some differences from the theoretical studies about the length of the haploid set in the way that the data that we got are inferior to those mentioned by other authors. It's obvious that it would be possible that in this case, the dimensions' reduction should be due to some higher chromosomes' condensation after the treatment with colchicine solution. **HSL** was 10,67  $\mu\text{m}$ , while Pavel and his co-workers, found 18,48  $\mu\text{m}$ .

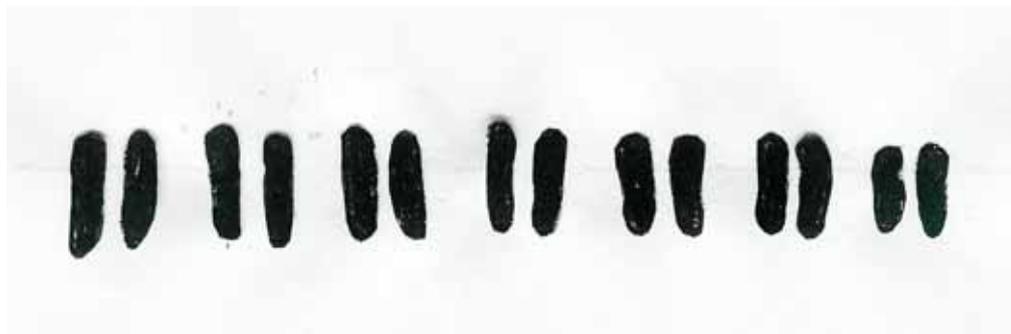
The values of the chromosomes relative length were comparable to those mentioned by other authors, fluctuating between 15,93 (the first pair) and 12,46 (the seventh pair).

The stems balance (LA-Sa), the basic criterion for establishing the homologues pairs was between 1,69 and 2,78, the centromeric index having values between 25,99 and 42,08 (a minor amplitude than that of the theoretical studies)

The difference between the stems has values between 0,43 and 0,77, the decreasing percentage between the successive pairs being almost invariable. It's obvious that the chromosomes's total lengths to be minor in our case comparing to those mentioned by other authors and also the values that we got to be less significant.



The metaphase of *Papaver rhoeas* (2n=14)



The karyotype at *Papaver rhoeas* (2n=14)

#### CONCLUSIONS

The chromosomes number of the somatic cells was 14 (2n=14). The karyotype is symmetric, less evolved. We consider that the species is extremely stable, a fact emphasized by the karyotype's slight evolution.

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